IN THE CLAIMS

1. (Currently amended) A bisubstrate inhibitor of insulin receptor kinase, comprising:

a nucleotide or nucleotide analog moiety;

and a peptide moiety which is a substrate for said insulin receptor kinase;

wherein said moieties are linked by a tether that comprises a proton donor, wherein the tether is $\geq$ 4.9 Å measured from a gamma phosphorus of the nucleotide or nucleotide analog moiety to the proton donor.

2. (Original) The bisubstrate inhibitor of claim 1 wherein the nucleotide or nucleotide analog moiety is ATP.

3. (Original) The bisubstrate inhibitor of claim 1 wherein the nucleotide or nucleotide analog moiety is γ-S-ATP.

4. (Original) The bisubstrate inhibitor of claim 1 wherein the peptide comprises a tyrosine residue in which its phenolic oxygen is replaced with a nitrogen atom.

5. (Original) The bisubstrate inhibitor of claim 1 wherein the peptide moiety has at least 4 contiguous amino acid residues selected from the sequence Lys, Lys, Lys, Leu, Pro, Ala, Thr, Gly, Asp, Tyr, Met, Asn, Met, Ser, Pro, Val, Gly, Asp (SEQ ID NO:1).

6. (Original) The bisubstrate inhibitor of claim 1 wherein the peptide moiety has at least 5 contiguous amino acid residues selected from the sequence Lys, Lys, Lys, Leu, Pro, Ala, Thr, Gly, Asp, Tyr, Met, Asn, Met, Ser, Pro, Val, Gly, Asp (SEQ ID NO:1).

7. (Original) The bisubstrate inhibitor of claim 1 wherein the peptide moiety comprises the sequence Lys, Lys, Lys, Leu, Pro, Ala, Thr, Gly, Asp, Tyr, Met, Asn, Met, Ser, Pro, Val, Gly, Asp (SEQ ID NO:1).

8. (Original) The bisubstrate inhibitor of claim 1 wherein the nucleotide or nucleotide analog moiety is a nucleotide in which one or more phosphate groups are replaced by uncharged alkyl groups.

9. (Original) The bisubstrate inhibitor of claim 1 wherein the nucleotide or nucleotide analog moiety is a nucleotide in which one or more phosphate groups are replaced by uncharged C_1 to C_3 alkyl groups.

10. (Original) The bisubstrate inhibitor of claim 1 wherein the peptide moiety comprises a membrane translocating sequence (MTS).

11. (Original) The bisubstrate inhibitor of claim 10 wherein the MTS is at the N-terminus of the peptide moiety.

12. (Original) The bisubstrate inhibitor of claim 10 wherein the MTS is at the C-terminus of the peptide moiety.

13. (Original) The bisubstrate inhibitor of claim 1 wherein the peptide moiety comprises an HIV TAT sequence.

14. (Original) The bisubstrate inhibitor of claim 1 wherein the peptide moiety comprises carbon-carbon bonds in place of amide bonds.

15. (Currently amended) A bisubstrate inhibitor of insulin kinase, comprising:

a nucleotide or nucleotide analog moiety;

and a peptide moiety which is a substrate for said insulin receptor kinase;

wherein said moieties are linked by a tether that comprises a proton donor, wherein the tether is ≥ 4.9 Å measured from a gamma phosphorus of the nucleotide or nucleotide analog moiety to the proton donor, wherein the bisubstrate inhibitor of insulin receptor kinase ~~The bisubstrate inhibitor for the insulin receptor tyrosine kinase of claim 1 which~~ is Compound 2.

16-57. (Canceled)

58. (Original) The bisubstrate inhibitor of claim 1 which is bound to insulin receptor kinase.

59. (Canceled)

60. (Currently amended) A bisubstrate inhibitor of a protein kinase comprising:

a nucleotide or nucleotide analog moiety; and

a peptide moiety which is a substrate for said protein kinase;

wherein said moieties are linked by a tether that comprises a proton donor, wherein the tether is ≥ 4.9 Å measured from a gamma phosphorus of the nucleotide or nucleotide analog to the proton donor.

61. (Canceled)

62. (Canceled)

63. (Original) The bisubstrate inhibitor of claim 60 wherein the protein kinase is a tyrosine protein kinase.

64. (Canceled)

65. (Canceled)

66. (Currently amended) The bisubstrate inhibitor of claim 63 wherein a nitrogen atom replaces a hydroxyl oxygen on a ~~the~~ tyrosine.

67. (Original) The bisubstrate inhibitor of claim 60 which is bound to the protein kinase.

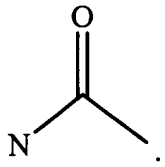
68. Canceled)

69. (New) The bisubstrate inhibitor of claim 60 wherein the peptide moiety comprises at least 4 contiguous amino acids of a natural substrate of said protein kinase.

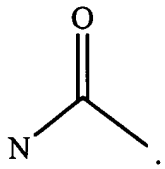
70. (New) The bisubstrate inhibitor of claim 60 wherein the peptide moiety comprises at least 5 contiguous amino acids of a natural substrate of said protein kinase.

71. (New) The bisubstrate inhibitor of claim 60 wherein the peptide moiety comprises at least 6 contiguous amino acids of a natural substrate of said protein kinase.

72. (New) The bisubstrate inhibitor of claim 1 wherein the tether is



73. (New) The bisubstrate inhibitor of claim 60 wherein the tether is



74. (New) The bisubstrate inhibitor of claim 60 wherein the peptide moiety is a natural substrate of said protein kinase.

75. (New) The bisubstrate inhibitor of claim 60 wherein the nucleotide or nucleotide analog moiety is a substrate for said protein kinase.

76. (New) The bisubstrate inhibitor of claim 1 wherein the nucleotide or nucleotide analog moiety is a substrate for said insulin receptor kinase.